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Sneeze-free preparation of Luria Bertani (LB) broth

Summary: Preparing Luria Bertani broth (LB) from premixed powders creates a fine dust that can induce sneezing and choking. I buy granulated LB from EMD chemicals (Part No: 1.10285.0500). The granules are easy to weigh and mix, and they produce far less fine dust, so you are less likely to sneeze or choke when preparing your media. Add 25 g of granulated media to 1 L of deionized water, autoclave, and your LB media is ready.

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Article by: Jeremiah Faith

LB broth (also called Luria Bertani broth or Lysogeny broth) is an undefined rich media that is frequently used to grow bacteria, particularly when you want to grow the cells quickly and to reasonably high densities (e.g. to produce plasmid for a miniprep). LB is not buffered, so the pH changes as cells grow.

There are three types of LB, which vary only in their salt content. The focus of this article is on LB Miller - the most commonly used variant. One-liter of LB Miller consists of: 10 g tryptone, 5 g yeast extract, 10 g NaCl. All LB must be autoclaved after mixing otherwise you'll end up with a contaminated mess of different bacteria.

The cheapest way to prepare LB

If you are going to make a huge amount of LB, it's probably cheaper to buy tryptone, yeast extract, and NaCl separately and mix them together with water. I never use this approach, as I value my time more than the small savings this method provides.

A simpler way to prepare LB

It's more common amongst the labs I frequent to buy LB as a premixed powder. For example, Fisher Scientific (Part No: BP1426-500) will sell you a container that already contains tryptone, yeast extract, and NaCl in the correct proportions. You



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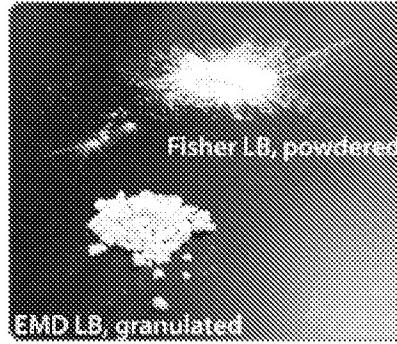
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simple add 25 g of the *Click image for larger* powder to 1 L of water and autoclave. Buying the premixed powder is slightly more expensive than adding the components one-by-one, but it'll save you a little time and your media should be more consistent from batch to batch, as the companies mix these components together in huge batches - ensuring the proportions are pretty consistent.

The sneeze and choke free way to prepare LB

The problem with the premixed powders is that when you dump them into your bottle a fair amount of fine dust floats into the air (from the yeast extract and tryptone). I don't know if it's dangerous or not (I'd guess it's not too harmful), but the powder will certainly make you choke or sneeze if you inhale too much of it (which is easy to do). Because of this, I buy the premixed LB powder from EMD chemicals (Part No: 1.10285.0500; I actually buy it from VWR Part No: EM1.10285.0500). This powder is granulated; and when you add the granules to your bottle, significantly less dust will fly out of the bottle. The granules are easier to weigh and clump up less than a powder when mixed with water, so it's actually a little faster to prepare too.



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This granular LB is a little more expensive, but I think it's worth the cost to not choke and sneeze when I make LB. EMD chemicals has a large number of other premixed dehydrated culture media ([click for their pdf listing](#)). EMD sells both powder and granulated for many media - you want the granulated ones.

The time-free route to LB - don't prepare it

You can also buy LB (and most other media for that matter) as a premixed, sterile solution. This ready-to-use solution approach is vastly more expensive than using the powder, and I think it doesn't save enough time to justify the large cost increase. The only time I use the premixed solution approach is when I need a complicated media for only a few experiments. If a media has *lots* of components whose purchase will cost a lot, it can often be cheaper to buy a premixed solution of your media from a custom media company like Teknova.

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